



## Complete Summary

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### GUIDELINE TITLE

Recommendations to diagnose and treat adult hair loss disorders or alopecia in primary care settings (non pregnant female and male adults).

### BIBLIOGRAPHIC SOURCE(S)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Recommendations to diagnose and treat adult hair loss disorders or alopecia in primary care settings (non pregnant female and male adults). Austin (TX): University of Texas at Austin, School of Nursing; 2004 May. 21 p. [23 references]

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## SCOPE

### DISEASE/CONDITION(S)

Hair loss or alopecia in adults

### GUIDELINE CATEGORY

Diagnosis  
Evaluation  
Management  
Treatment

### CLINICAL SPECIALTY

Family Practice  
Internal Medicine  
Nursing

## INTENDED USERS

Advanced Practice Nurses  
Physician Assistants  
Physicians

## GUIDELINE OBJECTIVE(S)

- To identify common causes of hair loss or alopecia in adults
- To provide an overview of therapies and serve as anticipatory guideline for patient education in terms of therapeutic timelines, risks, and expenses of various therapies
- To assist primary care providers or specialists in the early detection of symptoms, assessment of clinical situations, determination of appropriate treatment, and delivery of individualized interventions

## TARGET POPULATION

Male and female adult patients with or at risk for alopecia or hair loss. This guideline is not directed to the treatment of pediatric or pregnant patients.

## INTERVENTIONS AND PRACTICES CONSIDERED

### Screening

1. Assess for primary conditions or genetic predispositions that predict or cause hair loss.
2. Include scalp inspection in all physical examinations, observing density and distribution.
3. If alopecia is suspected, assess patient's perception of the condition and effects on quality of life, if indicated.

### Diagnosis/Evaluation

1. Perform review of systems and history of illnesses over past months.
2. Evaluate timeline of onset and progress of conditions.
3. Complete review of patient's prescriptive and over-the-counter (OTC) medications.
4. Perform a review of hygiene, hair treatments, and techniques of management, if indicated.
5. Evaluate health status and conditions possibly causing hair loss.
6. Obtain laboratory confirmation of underlying illnesses that may cause hair loss including:
  - Testosterone and free testosterone levels
  - Dehydroepiandrosterone sulfate (DHEA-S) levels
  - Prolactin levels
  - Serum thyroid stimulating hormone (TSH) levels
  - Venereal disease research laboratory (VDRL) techniques
  - Serum ferritin levels
  - Antinuclear antibody test, rheumatoid factor (ANA, RF)
  - Potassium hydroxide (KOH) examination

- Wound culture
- Scalp biopsy

## Treatment and Management

### Pharmacologic therapy

1. Thyroid replacement (levothyroxine [Levoxyl]) or adjustment for underlying hypothyroidism
2. Ketoconazole and oral antifungal agents including griseofulvin (Grifulvin), itraconazole (Sporanox), terbinafine (Lamisil), and fluconazole (Diflucan) for underlying fungal infection
3. Oral steroids (i.e. prednisone) for underlying fungal infection
4. Spironolactone (Aldactone), flutamide (Eulexin), and finasteride (Propecia) to treat underlying hormone imbalance
5. Penicillin, tetracycline, doxycycline, or Rocephin for underlying secondary syphilis
6. Tapering or discontinuation of drugs causing hair loss including antihypertensive agents, anti-gout medications, etc
7. Behavioral therapy, anti-anxiety, and antidepressant medications for underlying psychological illnesses
8. Drug therapy for alopecia including minoxidil (Rogaine 2% for women, Rogaine 5% for men), finasteride (Propecia for MEN only), estrogen (for women only), and tretinoin (Retin-A)

### Nonpharmacologic therapy

1. Cosmetic measures (hairstyle adjustments, wigs, extensions, hair pieces, hats, scarves).
2. Cessation of wearing tight braids, buns, pins
3. Avoidance of identified sources of chemical/allergic causes
4. Surgical interventions (grafts, flaps, reductions, transplantations)

### Referral

1. Refer to dermatologist for skin/scalp fungal infection unresponsive to conventional therapies.
2. Refer for surgery for unresponsive genetic or other conditions unresponsive to treatment.
3. Provide immunology or dermatology consult for undiagnosed or complex comorbidity management.

## MAJOR OUTCOMES CONSIDERED

- Quality of life
- Tolerability of therapy
- Side effects of therapy
- Cost of therapy
- Patient satisfaction

## METHODOLOGY

### METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)  
Searches of Electronic Databases

### DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Searches of electronic databases such as PubMed, eMedicine, and online journals.  
Keywords search on Internet search engines such as Google and Yahoo.

The inclusion criteria for the literature search were related to the population being studied (adults), the conditions causing hair loss, general cost and efficacy comparisons of interventions, and long term outcomes. The medical subject heading terms used for the search were therapies in alopecia, expense and cost, side effects, and efficacy. In this search, study characteristics were those of analytical studies, case-control studies, cohort studies, longitudinal studies, and controlled clinical trials. Also utilized information was from expert panel consensus and peer review of the current research and past clinical experiences in clinical practice.

### NUMBER OF SOURCE DOCUMENTS

23

### METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review  
Weighting According to a Rating Scheme (Scheme Given)

### RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Grade A: Randomized clinical trials  
Grade B: Well-designed clinical studies  
Grade C: Panel consensus

### METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

### DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

### METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus  
Informal Consensus

## DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

This guideline is the product of many months of consensus building among knowledgeable individuals.

## RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

### Strength of Recommendation

Level I: Usually indicated, always acceptable, and considered useful and effective.

Level II: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level III: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

## COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

## METHOD OF GUIDELINE VALIDATION

Peer Review

## DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

A draft of the guideline was developed by a group of family nurse practitioner (FNP) students and submitted for review to the FNP program faculty for review. Revisions were made after recommendations were received.

## RECOMMENDATIONS

### MAJOR RECOMMENDATIONS

Levels of evidence (grades A-C) and recommendation grades (levels I-III) are defined at the end of the "Major Recommendations" field.

Major Recommendations (All are level II)

Diagnostic Evaluation

History and Physical Examination

1. Patient history of alopecia: onset of hair loss, hair loss pattern (diffuse or focal), rate and timing of hair loss, other scalp symptoms (itching, burning, tingling)
2. Personal history: dietary changes, diet, hair-care routine, hygiene products, medications (prescription medications, vitamins, over-the-counter [OTC] medications, and herbal remedies), stress, major illness
3. Female patient: menstrual and reproductive histories
4. Any family history of alopecia, patient's concurrent systemic/chronic illness, physical stress, medication, environmental exposure, psychiatric disorders, hairstyle, signs and symptoms of hormonal abnormalities
5. Physical examination:
  - a. Scalp exam for any scars, erythema, scaling, or inflammation
  - b. Density and distribution of hair
  - c. Hair shaft exam for caliber, length, shape, and fragility
  - d. Thyroid palpation to determine thyroid size, nodularity, or vascularity
6. Use "pull test" technique for hair loss. Grasp about 60 hairs between the thumb, the index, and the middle fingers. The hairs are then gently but firmly pulled. A positive test (2–10 hairs obtained) indicates an active hair shedding.

If a patient demonstrates positive hair-pull tests all over the scalp, he/she may be warned he/she will most likely lose all of their hair. Next, provide anticipatory guidance during the period of extensive hair loss as the cycle reestablishes and regrowth begins.

Finally, determine if eyebrow, eyelash, axillary, or body hair is affected. Examine hair density in other areas such as the face and extremities. A female patient who presents with thinning scalp hair and demonstrates increased facial, thigh, chin, or chest hair may have an androgen excess.

### Laboratory Studies

Once other causes such as malnutrition, androgenetic, hereditary conditions (by history, progression, and presentation), trauma (trichotillomania, traction alopecia), and drugs (telogen effluvium) have been ruled out, consider labs for secondary conditions:

- For female alopecia with symptoms of hyperandrogenism (such as menstrual irregularities, infertility, cystic acne, virilization, or galactorrhea), check total testosterone, free testosterone, dehydroepiandrosterone sulfate (DHEA-S), or prolactin levels.
- For male and female alopecia without symptoms of hyperandrogenism, consider measurement of serum thyroid stimulating hormone concentration to rule out thyroid disease; venereal disease research laboratory (VDRL) technique to rule out syphilis; serum ferritin to rule out anemia; antinuclear antibody test (ANA), RF (rheumatoid factor) to rule out autoimmune disease; potassium hydroxide (KOH) examination to rule out tinea capitis; swab a wound culture to rule out infections; and scalp biopsy as needed to rule out neoplasm.

### Disorders Causing Hair Loss in Adults

- Androgenetic alopecia

- Male: Hereditary. Dihydrotestosterone compels follicles into perpetual telogen phase. The earlier oral or topical treatment is started, the better results one may expect.
- Female: Female androgenetic pattern incidence increases with age. Incidence is approximately 6% in women under 50, but increases to 38% in women over 70. Female pattern hair loss typically demonstrates a lower density of hair but maintains a relatively even distribution, known as "Ludwig" distribution. Even thinning across the crown is typical, while the frontal line maintains position.
- Telogen effluvium
  - Telogen effluvium is the most common form of diffuse alopecia. It is often diagnosed from a history of an initiating event 3 months before the onset of shedding. Causes include childbirth, sustained high fever, surgery, systemic disease exacerbation, crash low protein diets, severe emotional stress, and drug reactions. Pull tests are positive all over the scalp. Bitemporal recession is a useful diagnostic sign in women. The acute form normally subsides in 3 to 6 months. In true telogen effluvium, the hair invariably regrows within a short time.
- Postpartum telogen effluvium
  - This condition is associated with postpartum hormone-related changes that temporarily prolong hair resting phase. It is most commonly seen 2 to 4 months postpartum.
- Anagen effluvium
  - Anagen effluvium is drug or toxin-induced and may mimic diffuse alopecia areata. Chemotherapy is the most common cause.
- Trichotillomania
  - Trichotillomania is the manifestation of a psychogenic behavioral pattern of frequent hair-pulling by the patient. It is frequently related to obsessive-compulsive disorder and can be seen in males and females of all ages, but most commonly in preadolescent and early adolescent girls. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning. The bald area manifests as a distinct, unnatural geometric shape. Hair may be pulled from a secondary site, such as the eyelashes, eyebrows, underarms, body, or pubis. Assess for other psychosocial factors and disorders and refer for counseling as indicated.
  - Diagnostic and Statistical Manual-IV (DSM-IV) Criteria for Trichotillomania:
    - Recurrent pulling out of one's hair, resulting in untreatable hair loss
    - Increasing sense of tension immediately before pulling out the hair or when attempting to resist behavior
    - Pleasure, gratification, or relief when pulling out the hair
    - The disturbance is not better accounted for by another mental disorder and is not due to a general medical condition (e.g., a dermatologic condition).
- Alopecia areata
  - Alopecia areata is an inherited autoimmune condition of varying severity. In some patients, hair loss is confined to one or more small oval patches; in others, the scalp is essentially denuded except for a few tufts of hair. It may involve the entire scalp (alopecia totalis) or the surface of the whole body (alopecia universalis). The condition is

marked by exacerbation and recovery with high variability among individuals.

- Tinea capitis
  - Tinea capitis is a contagious fungal infection of the scalp mostly seen in ages 4 to 14 years. There are fine, scaly, circumscribed areas that are frequently itchy and inflamed. Hair is dull and brittle, breaking off at scalp. In more extensive cases, there may be fever and cervical lymphadenopathy. In the United States, over 90% of cases are from the nonfluorescent *Trichophyton* fungus. Potassium hydroxide (KOH) examination shows hyphae. Antifungals such as terbinafine, fluconazole, itraconazole, or griseofulvin are used for treatment.
- Systemic lupus erythematosus (SLE)
  - SLE is a chronic autoimmune inflammatory disease affecting collagen. It involves multiple systems of the body including hair loss.
- Secondary syphilis
  - Secondary syphilis usually begins 2 to 8 weeks after chancre type lesions appear. It can present with patchy hair loss, mostly on the scalp and often elsewhere on the body. This hair loss is often described as having a moth-eaten appearance. High-risk clients should also be questioned regarding past rashes, especially on the palms, soles, and any chancroid lesions or condyloma. Diagnosis is serologic (VDRL or rapid plasma regain [RPR]), and hair regrowth occurs after penicillin therapy. Penicillin remains the first choice, but if an allergy exists, intramuscular Rocephin (x 10 days), tetracycline, or doxycycline may be tried for 2 weeks.
- Side effects of medications
  - Medications such as cytotoxic agents, colchicine, heparin, oral anticoagulants, hydroxyurea therapy, vitamin A, captopril, protease inhibitors such as indinavir and nelfinavir, amphetamines, anticancer agents, gout medication, isotretinoin (Accutane), lithium, male hormones, propranolol hydrochloride (Inderal), and valproic acid (Depacon, Depakene, Depakote), can all induce nonscarring hair loss.
- Birth control pills
  - Women who lose hair while taking birth control pills may have an inherited tendency for hair thinning. If hair thinning occurs, a woman can consult her gynecologist about switching to another birth control pill. When a woman stops using oral contraceptives, she may notice that her hair begins shedding two or three months later. This may continue for six months when it usually stops. This is similar to hair loss after the birth of a child.
- Caustic chemicals
  - Anyone who curls, straightens, colors, or dyes their hair may cause hair loss. Repeated exposure to these substances can injury hair follicles, weaken hair, or even damage the scalp. It is most often seen in African women, and inflammation is not always obvious.
- High fever or severe infection
  - Acute and some chronic illnesses may cause hairs to enter a prolonged resting telogen phase (also known as telogen effluvium). It is not uncommon to experience a higher incidence of hair loss up to three months after high fever, severe illness, or infection. This resting phase typically resolves after several months and normal hair growth rebounds when the growth cycle returns.
- Other causes of hair loss



- Other causes of hair loss include anemia, hypoalbuminemia, malnutrition, Lichen planus, Staphylococcal folliculitis, scleroderma, psoriasis, seborrheic dermatitis, menopause, hypothyroidism, herpes zoster, and others.

### Treatment Recommendations

The choice of therapeutic intervention for alopecia depends on several factors:

- The underlying cause
- The goals of therapy
- The long-term risks, benefits, costs

The evaluation and treatment of alopecia should begin as early as possible after the onset of symptoms. Many conditions causing alopecia or reduced hair density may be reversed or minimized with prompt intervention.

### Pharmacologic – Treatment of the Underlying Illness

- Hypothyroidism
  - Thyroid replacement or adjustment as indicated
- Fungal infection
  - Ketoconazole, oral antifungal agents such as griseofulvin (Grifulvin), itraconazole (Sporanox), terbinafine (Lamisil), and fluconazole (Diflucan) may be used. Oral steroids may be necessary to decrease inflammation and scarring.
- Hormone imbalance
  - If female androgen excess is suspected (hirsutism, acne) or menses is irregular, check DHEA-S and free testosterone levels first to rule out adrenal or ovarian cancer.
  - Once ruled out, consider spironolactone, flutamide, or finasteride.
  - Spironolactone competes with testosterone and dihydrotestosterone at the androgen receptor level. Spironolactone 100 mg per day can be given in divided doses; this dose may be increased to 200 mg.
  - Flutamide (Eulexin), an antiandrogen that blocks androgen uptake and nuclear binding, is a very effective drug in treating hyperandrogenism. Give 250 mg daily and monitor hepatotoxicity.
  - Finasteride (Propecia) blocks the conversion of testosterone to dihydrotestosterone. The plasma levels of testosterone may increase during treatment, whereas the dihydrotestosterone level decreases. Of utmost importance, the patient should be aware that she must avoid pregnancy during treatment with finasteride because of the potential for causing ambiguous genitalia in a male fetus.
- Drug-induced hair loss (effluvium)
  - Drugs that induce hair loss include antihypertensive agents, anti-gout medications, etc. Consider tapering or discontinuing the medication if untoward risks are low.
- Chemotherapy
  - Recommend nonpharmacologic therapy (wig, hairpiece).
- Psychological causes of hair loss (Trichotillomania)
  - Consider behavioral therapy, antianxiety or antidepressant medication, or any combination of the two.

- Physical stress from surgery/acute illness
  - Reassure patient hair regrowth once stress removed.
- Lupus and diabetes
  - Treat underlying diseases.
- Traction alopecia
  - Hair loss that is secondary to grooming such as tight braids, "cornrows," pony tail: Change hair styling technique.
- Drug therapy for alopecia (alopecia with no underlying disease)
  - Minoxidil (Rogaine 2% for women, Rogaine 5% for men): Apply 1 mL twice a day (BID) regardless of the extent of the affected area; one year of use may be needed before obvious efficacy. Minoxidil is mainly for hair loss at vertex, not for frontal baldness.
  - Propecia (finasteride 1 mg): Food and Drug Administration (FDA) approved; for MEN ONLY
  - Monotherapy or synergistic use:
    - For women - May add estrogen to any therapy
    - For men/women - May add tretinoin (Retin-A) topical as an adjunct/synergistically with minoxidil

#### Nonpharmacologic Treatment

- Cosmetic measures (hairstyle adjustments, wigs, extensions, hair pieces, hats, scarves)
- Cessation of wearing tight braids, buns, pins
- In chemical/allergic causes, avoidance of the identified sources

#### Monitoring Treatment/Discontinuation of Treatment

##### Patients with Hypothyroidism

Initiate thyroid hormone replacement therapy to obtain thyroid-stimulating hormone (TSH), triiodothyronine (T3), and thyroxine (T4) in the normal range. Treatment will be long term, even as hair regrowth occurs. Monitor hair regrowth in each follow up with hypothyroidism.

##### Patients Considered for Treatment Related to Fungal Infection

If long-term antifungal treatment is required, monitor liver function and gastrointestinal (GI) symptoms. Obtain baseline alanine aminotransferase (ALT), aspartate aminotransferase (AST), and bilirubin before treatment. Reevaluate in 4 to 8 weeks. Discontinue if there are any GI symptoms or signs of liver dysfunction such as fatigue, nausea, anorexia, vomiting, dark urine, or pale stools. Monitor drug interactions when patients have comorbidities and are using other medications. Check safety of different antifungals on women in childbearing ages.

##### Patients with Androgenetic Imbalance

Monitor hepatotoxicity if the patient is treated with flutamide. Monitor irregular menses, reduced libido, mood swings, and electrolytes if treated with spironolactone.

## Patients on Medications for Hair Loss

### Minoxidil (Rogaine) - Topical use

Since its mechanism of action is to stimulate hair growth by vasodilation, it may exacerbate angina pectoris. Use with caution in patients with pulmonary hypertension, congestive heart failure, coronary artery disease, and significant renal failure. Topical use may also cause pruritus, and Stevens-Johnson syndrome.

### Finasteride (Propecia)

Give 1 mg daily (QD) with or without food to MALE patients only. Pregnant women or women who may potentially become pregnant should not touch crushed tablets because of teratogenic effects on male fetus. Monitor hepatic function. Potential side effects include decreased libido and erectile dysfunction.

### Steroids (e.g. prednisone)

Side effects of steroids include diabetes, weight gain, hypertension, electrolyte and fluid imbalance, osteoporosis, striae, acne, renal function impairment, avascular necrosis, and immunosuppression. Abrupt discontinuation may cause adrenal crisis.

## Individualization of Therapy

- The Women's Androgenetic Alopecia Quality of Life Questionnaire (WAA-QOL) is useful in evaluating health-related quality of life (HRQOL) specific to women. It is self-completed in about 10 minutes and may serve both to indicate the impact on the patient (and potential indication for intervention) and evaluate therapeutic responses to therapy.
- Decide whether the patients want to use topical treatment or oral treatment. Patients at different ages may have preferences.
- The hair growth cycle is slow. Affected changes take time to notice. Once therapy is selected, stick with it for 3 to 6 months and then reevaluate.
- Treatment follow-up (3- to 6-month intervals).
- Adjust therapy and identify causes if inadequate response.

## Important Considerations

### Cosmetic management and psychosocial adaption

- Regrowth of new or thicker hair for larger scalp coverage
- Decreased rate of hair loss (i.e., slow down balding progression)
- Surgical reconstruction
- Cost and side effects of drug therapy
- Tolerability of therapy (patient satisfaction with care, quality of life, and adherence to treatment regimen)
- Final assessment and evaluation including hair density readings
- Assessment of patient satisfaction as measured by quality of life index

## Screening and diagnosis

Routine laboratory tests help to determine the presence of underlying causes and risk factors that would affect treatment. Optional tests may be used, depending on findings obtained in the history and physical examination and previously known conditions. A greater, more inclusive assessment can be determined by referral to dermatology.

## Informed guidance to treatment options

Clinicians should begin by providing the patient with a summary of information on:

- Causes of hair loss and their respective potential to respond to medical therapies
- Details of what therapeutic options involve, including directions for use, potential side effects, interactions, timeline for responses, follow-up visits, financial expense, and long-term outcomes

## Evaluate treatment goals

The primary objective of treatment is to reach therapeutic responses as closely to patient goals within budget and expectation that is both understood and acceptable by the informed patient. To modify drug therapy and maximize response toward patient goals, clinicians should consider cost where therapeutic effect is equal. To facilitate compliance, clinicians should choose medications with simple regimens.

## Therapeutic adjustment and further individualization

- Titrate drug or add another agent if there is good tolerance but poor response. Allow for several weeks to two months before drug or dosage changes are made. If the response remains less than anticipated, substitute with a drug of a different class or action.
- Always consider alternative explanations for poor response to drug therapy to explore secondary causes.
- In each patient encounter, reassess adherence, quality of life, and patient goals. Assess the long-term response to therapy. Reassess side effects that might complicate therapy or limit efficacy. Monitor the development of target organ damage. Reinforce lifestyle modification.

## Evaluate the efficacy of therapy

- To assess adequacy of hair growth, use an objective measurement tool such as a scalp chart, comparison with before-treatment photos, and a subjective self-assessment of quality of life before and after treatment.
- Patients should be seen within 1 or 2 months after the initiation of therapy to determine therapeutic response, degree of patient adherence, and presence of adverse effects. Earlier follow-up may be necessary for patients with underlying comorbid conditions.

- Once the patient's response is observed, follow-up at 3- or 6-month intervals (depending on the patient status) is generally appropriate.
- Consider referral or consultation in unresponsive or complex comorbid cases.

### Definitions

#### Levels of Evidence

Grade A: Randomized clinical trials

Grade B: Well-designed clinical studies

Grade C: Panel consensus

#### Strength of Recommendation

Level I: Usually indicated, always acceptable, and considered useful and effective.

Level II: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence in favor of usefulness/efficacy.

Level III: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

#### CLINICAL ALGORITHM(S)

None provided

### EVIDENCE SUPPORTING THE RECOMMENDATIONS

#### TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting each recommendation is not specifically stated.

### BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

#### POTENTIAL BENEFITS

- Early identification of causes of hair loss in adults and possible concomitant disorders
- Early intervention of underlying problems
- Improvement of psychologic well-being and body image
- Avoidance of expensive, ineffective, and time-consuming therapeutic attempts

#### POTENTIAL HARMS

Adverse Effects Associated with Pharmacologic Therapy

- Aldactone (spironolactone): decreased libido, increased mood swings, hyperkalemia, hyponatremia, irregular menses, agranulocytosis
- Antifungal agents (Diflucan, Lamisil, Sporanox): liver dysfunction, gastrointestinal (GI) symptoms, some may be unsafe for pregnant women.
- Eulexin (flutamide): hot flashes, decreased libido, impotence, gynecomastia, jaundice, gastrointestinal disturbances, leucopenia, thrombocytopenia
- Levoxyl (levothyroxine): seizures (rare), thyroid storm, cardiac arrest, menstrual irregularities, weight loss, heat intolerance
- Propecia (finasteride): decreased libido, erectile dysfunction, decreased volume of ejaculate, breast tenderness
- Retin-A (tretinoin): local skin reactions, photosensitivity, and temporary skin pigmentation changes
- Rogaine (minoxidil): itching, skin irritation, unwanted facial hair growth, Stevens-Johnson syndrome
- Steroids (prednisone): fluid and electrolyte disturbances, hypertension, osteoporosis, muscle weakness, cushingoid state, menstrual irregularities, nervousness, insomnia, impaired wound healing, diabetes, ulcerative esophagitis, weight gain, malaise

### Drug Interactions

- Aldactone (spironolactone): Risk of hyperkalemia with potassium (K+) supplements, nonsteroidal anti-inflammatory drugs (NSAIDs), and angiotensin-converting enzyme (ACE) inhibitors. Risk of digoxin and lithium toxicity
- Antifungals: Potentiate warfarin, increase phenytoin, theophylline, and cyclosporine concentrations. Antacids and histamine 2 (H2)-receptor antagonists decrease antifungal actions. Monitor liver function, especially when the patient is taking lipid-lowering medications.
- Eulexin (flutamide): May increase prothrombin time (PT), monitor warfarin.
- Levoxyl (levothyroxine): Increased risk of cardiac insufficiency with epinephrine; increased effects of anticoagulants, tricyclic antidepressants, and sympathomimetic agents; decreased effects of digitalis, insulin, and hypoglycemic agents; estrogen decreases effects of Levoxyl.
- Propecia (finasteride): Theophylline, adrenergic bronchodilators, and anticholinergic agents decrease effects of Propecia.
- Retin-A (tretinoin): Use caution with topical agents with strong drying effects, including alcohol, sulfur, and salicylic acid.
- Rogaine (minoxidil): Antihypertensives may cause orthostatic hypotension.
- Steroids (prednisone): Decreased effects of anticoagulants, anticonvulsants, antidiabetics, vaccines, anticholinesterases, and salicylates. Decreased action of prednisone by theophylline, barbiturates, and phenytoin. Increased action of prednisone by estrogens, indomethacin, ketoconazole, and macrolide antibiotics.

### Surgery

- Hair transplantation:
  - May need multiple sessions
  - Pricey
  - Temporary loss of some hair adjacent to the donor and the recipient areas

- Risk of wound infection

#### Nonsurgical Cosmetics

- Wigs and hairpieces
  - Pricey
  - Not natural looking
  - Uncomfortable

#### Special Considerations

- Of utmost importance, the patient should be aware that she must avoid pregnancy during treatment with finasteride because of the potential for causing ambiguous genitalia in a male fetus.
- Pregnant women or women who may potentially become pregnant should not touch crushed (finasteride) tablets because of teratogenic effects on male fetus.

#### Subgroups Most Likely to be Harmed:

- Patients with underlying causes of hair loss that are not detected
- Women who may not know they are pregnant

### CONTRAINDICATIONS

#### CONTRAINDICATIONS

- Aldactone (spironolactone): acute renal insufficiency, hyperkalemia
- Antifungals: pregnancy or contemplating pregnancy, lactation
- Eulexin (flutamide): pregnancy, severe hepatic impairment
- Levoxyl (levothyroxine): adrenal insufficiency, myocardial infarction, thyrotoxicosis, hypersensitivity to beef
- Propecia (finasteride): children, pregnancy or contemplating pregnancy, lactation
- Retin-A (tretinoin): pregnancy, sensitivity to retinoids or parabens
- Rogaine (minoxidil): acute myocardial infarction (MI), dissecting aortic aneurysm, pheochromocytoma
- Steroids (prednisone): psychosis, systemic fungal infections

### QUALIFYING STATEMENTS

#### QUALIFYING STATEMENTS

- This guideline is not intended to direct the treatment of pediatric and pregnant patients.
- This document is intended as a guideline and should not supersede the clinical judgment of the health care provider. It is provided for discussion, educational purposes, and as a decision making tool both for clinicians and patients. It should not be used or relied upon without supervision of a qualified physician.

## IMPLEMENTATION OF THE GUIDELINE

### DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

## INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

### IOM CARE NEED

Getting Better  
Living with Illness

### IOM DOMAIN

Effectiveness  
Patient-centeredness

## IDENTIFYING INFORMATION AND AVAILABILITY

### BIBLIOGRAPHIC SOURCE(S)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Recommendations to diagnose and treat adult hair loss disorders or alopecia in primary care settings (non pregnant female and male adults). Austin (TX): University of Texas at Austin, School of Nursing; 2004 May. 21 p. [23 references]

### ADAPTATION

Not applicable: The guideline was not adapted from another source.

### DATE RELEASED

2004 May

### GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program  
- Academic Institution

### SOURCE(S) OF FUNDING

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

### GUIDELINE COMMITTEE



Practice Guidelines Committee

#### COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Authors: Florence Falola, RN, BSC, MSC, MSN; Kirby Reed, RN, BS, MSN; So-Fong Wong, CNS, BSS, MSN

#### FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

#### GUIDELINE STATUS

This is the current release of the guideline.

#### GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the University of Texas at Austin, School of Nursing.  
1700 Red River, Austin, Texas, 78701-1499

#### AVAILABILITY OF COMPANION DOCUMENTS

None available

#### PATIENT RESOURCES

None available

#### NGC STATUS

This NGC summary was completed by ECRI on August 25, 2004. The information was verified by the guideline developer on November 12, 2004.

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